

APPENDIX H – COMPARISON OF ALTERNATIVES BY MANAGEMENT STRATEGY

Table H1. Comparison of Alternatives by Management Strategy

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D
Physical Resources Program				
Air Quality				
Utilize smoke dispersion models for prescribed fire projects greater than 250 acres.	X	X	X	X
Wherever feasible, apply Emission Reduction Techniques (ERTs) to reduce emissions and control greenhouse gas emissions from burn activities on NFS lands. Consider non-burning alternatives in addition to ERTs wherever possible to reduce and prevent smoke intrusion into communities. Manage emissions from on-forest activities to avoid elevating ambient air concentrations to levels that result in non-attainment of standards for the Lake Tahoe Basin.	X	X	X	X
For Forest Service operated combustion engines, utilize alternative fuels when technically and fiscally feasible, for purposes of reducing greenhouse gas emissions and ozone precursor emissions.	X	X	X	X
Consider the Regional Haze State Implementation Plan targets for the Class 1 Airshed over Desolation Wilderness during project planning.	X	X	X	X
Water Quality and Soil Quality				
Implement PSW Region Best Management Practices to protect and conserve physical resources.	X	X	X	X
Manage activities within SEZs in a manner that is consistent with the protection of SEZ functions and values and protection of beneficial uses of water bodies.	X	X	X	X

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D
Participate in achieving the program goals for the Integrated Water Quality Management Strategy for achievement of the Lake Tahoe TMDL.	X	X	X	X
Ensure that identified beneficial uses for water bodies are adequately protected. Identify the specific beneficial uses for the project area, and water quality goals from the Regional Basin Plan.	X	X	X	X
Disperse runoff to reduce velocity, and increase infiltration to enhance treatment of nutrients and contaminants. Stabilize soil to prevent accelerated (human-caused) erosion of topsoil and subsequent sedimentation and loss of soil productivity. Utilize NFS lands for treatment of urban runoff where appropriate.	X	X	X	X
Reduce the watershed impacts resulting from land coverage. Minimize the development of new hard and soft coverage from forest management activities. Seek out opportunities to reduce coverage through site design when retrofitting, improving, or rebuilding at existing developed sites.	X	X	X	X
Protect natural functioning of soil resources and sustain or improve long-term soil productivity in areas dedicated to growing vegetation. Where past management activities have reduced soil productivity below Forest Service regional or national guidelines, improve soil productivity by resspreading displaced topsoil, using tillage to increase porosity, increasing nutrient supplies through the addition of appropriate amendments, or increasing nutrients and water-holding capacity through the addition of organic matter.	X	X	X	X
Water Use and Development				
Where feasible, arrange for and secure water rights for existing and foreseeable future Forest Service consumptive uses, including administrative, recreation, erosion control, and evaporative losses.	X	X	X	X
Where feasible, obtain water availability assurances for existing and foreseeable future non-consumptive uses, including minimum instream flows and reservoir level maintenance for fish, wildlife, boating, swimming, and aesthetics.	X	X	X	X
Manage dams to ensure adequate flows for downstream uses, including supporting aquatic habitats. Consider opportunities for removal of dams.	X	X	X	X

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If it is not possible to determine from existing data the magnitude of potential adverse effects on the groundwater table of a groundwater development project, a geologic and geotechnical analysis should be conducted.	X	X	X	X
Use plants which do not require long-term irrigation in re-vegetation and landscaping projects in order to conserve water.	X	X	X	X
Natural Hazards				
Evaluate natural hazards before developing or permitting new uses or facilities on NFS lands.	X	X	X	X
Watershed Restoration				
Implement restoration projects in high priority watersheds identified by LRWQCB's total maximum daily load (TMDL) Model for Lake Tahoe, to improve self-sustaining, dynamically stable stream systems, channel stability, and hydrologic function.	X	X	X	X
Implement currently planned projects. New watershed restoration projects would be limited to removal of stressors, and the rate of watershed recovery would be governed by natural processes.				X
Implement projects identified through National USFS Watershed Condition Assessment Process.	X	X	X	X
In general, where stream characteristics are outside the natural range of variability in the area of a proposed project/activity, implement mitigation measures and short-term restoration actions to prevent further declines or cause an upward trend in conditions.	CP	X	X	
Reconnect floodplains with stream channels to enhance treatment of nutrients and contaminants, and improve channel geomorphic function to reduce in-channel sediment sources and increase in-channel sediment storage.	CP	X	X	

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D
Design projects to maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows, wetlands, and other special aquatic features. Implement restoration projects to attenuate peak flows and promote water storage in SEZs.	CP	X	X	
Maintain or restore: (1) the geomorphic and biological characteristics of special aquatic features, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; (2) streams, including in stream flows; and (3) hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic-dependent species.	CP	X	X	
Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species.	CP	X	X	
Design projects to maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features. During project analysis, roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths should be identified and corrective actions planned and implemented where necessary to restore connectivity	CP	X	X	
Forest Vegetation, Fuels and Fire Management Program				
Forest Vegetation and Fuels				
Emphasize prevention in the form of silvicultural (e.g. mechanical treatments, herbicides, etc.) or prescribed fire treatments, resulting in forest stands that are less susceptible to high levels of tree mortality caused by drought, wildfires and bark beetles.		X	X	
Emphasize use of prescribed fire, managed wildfire and hand thinning to achieve forest stands that are less susceptible to high levels of tree mortality caused by drought, wildfires and bark beetles.				X

Comparison of Alternatives by Management Strategy	Alt A	Alt B	Alt C	Alt D
Invoke specific integrated pest management strategies as needed to respond to immediate native or exotic forest insect or disease threats to forest health, which may include removal or treatment of beetle-infested trees, when identified that threaten developed recreation and administrative sites, and private property, prior to beetle emergence, to reduce the likelihood of further infestation.	X	X	X	X
Establish measures to prevent the establishment and spread of invasive plants during project implementation and post-disturbance rehabilitation activities.	X	X	X	X
Consider all available technologies and management tools and practices to meet project objectives.		X	X	
Consider all available technologies and management tools and practices to meet project objectives, but emphasize use of prescribed fire, managed wildfire, and hand thinning.				X
Vegetation management activities adhere to ecologically-based management strategies and are integrated, ultimately to restore or maintain forest resiliency. For example, forest vegetation treatments around communities (thinning that alters density, structure, and species composition) to restore forest resilience to wildfire also meet the goals of reducing forest stand susceptibility to bark beetle-caused tree mortality.	CP	X	X	X
Vegetation treatments in montane forests favor Jeffrey pine, sugar pine that is white pine blister rust-resistant, and aspen, species that have become much less common over the last century due to logging and fire exclusion.	CP	X	X	X
Reforestation strategies incorporate species mix, stocking density, or use of genetically superior or pest resistant planting stock, to restore landscapes and improve adaptability under climate change.		X	X	
Reforestation strategies incorporate species mix, stocking density, or use of genetically superior or pest resistant planting stock, to restore landscapes	X			X
Revegetation following a disturbance event or management activity first considers hazard tree removal, then the potential for natural regeneration of early seral vegetation, and finally, the need for artificial regeneration and corresponding competing vegetation control measures.		X	X	

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Revegetation following a disturbance event or management activity first considers hazard tree removal, then the potential for natural regeneration of early seral vegetation.				X
Forest vegetation treatments, including aspen stand enhancements and riparian area restorations, achieve High Minimum Scenic Stability (MSS) and enhance desired scenic attributes and are applied on a project-by-project basis.		X	X	
Forest vegetation treatments, achieve High Minimum Scenic Stability (MSS) and enhance desired scenic attributes and are applied on a project-by-project basis.				X
When restoring disturbance regimes such as fire, many forest stands are currently too dense to allow the re-establishment of a frequent-fire regime. In these cases, management techniques such as thinning and prescribed burning are used as surrogates for wildfire and other mortality agents.	X	X	X	
Planned and unplanned ignitions are used where possible to accomplish forest health, wildlife habitat, or other ecosystem restoration objectives.	X	X	X	X
The majority of fuels reduction treatment efforts are concentrated in WUIs until initial WUI treatments are completed WUI maintenance treatments occur as needed.	X	X	X	X
Consistent with preserving the recreation resource, trees, tree limbs, or downed woody debris identified as hazardous at developed recreation sites are removed.	X	X	X	X
Projects should consider the creation of openings of varying sizes and shapes that retain reserve trees and clumps to produce spatial and structural heterogeneity in forest stands, and should give greater weight to openings from 2 to 7 acres. Forest structure should vary over the landscape in relation to topographic variables of slope, aspect, and slope position.	X	X	X	X
Where reforested areas (generally Pacific Southwest Region size classes 0x, 1x, 2x) are included within area treatments, consider designing treatments to also: (1) accelerate the development of key habitat and late seral characteristics, (2) increase stand heterogeneity, (3) promote hardwoods, and (4) reduce risk of loss to wildland fire.	X	X	X	X

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Preference should be given to reducing stand density and modifying species composition through thinning treatments to prevent/reduce high levels of bark beetle-or other forest pest -caused tree mortality. Preventive measures such as thinning should be used for reducing opportunities for forest pests.	X	X	X	
Vegetation treatments designed to restore aspen should focus on restoring dominance of aspen in the canopy; regenerating and expanding aspen stands; reducing the risk of loss of aspen stands from the landscape; and developing vigorous under-story deciduous tree, shrub, and herbaceous associations and habitats.	CP	X	X	X
Perpetuate and promote existing late seral stages in each project area and throughout the broader landscape if feasible, with primary emphasis on protecting/enhancing late seral dependent wildlife habitat.		X	X	
Perpetuate and promote existing late seral stages in Old Forest Emphasis Areas with primary emphasis on protecting/enhancing late seral dependent wildlife habitat.	X			X